

### **Amendments to the Specification:**

Please replace paragraphs 35, 36, and 38 to correct the application serial numbers with the corresponding publication or patent number with the following amended paragraphs:

[0035] It may be desirable to form the preform so that the material of an inner portion of the preform has a higher softening point than the material of an outer portion of the preform, as is described in commonly owned ~~U.S. Patent Application Serial Number 10/171,337, filed on June 12, 2002~~ U.S. Patent Number 6,847,771, issued on January 25, 2005 and entitled "MICROSTRUCTURED OPTICAL FIBERS AND METHODS AND PREFORMS FOR FABRICATING MICROSTRUCTURED OPTICAL FIBERS", the specification of which is hereby incorporated herein by reference in its entirety. For example, the difference in softening points may be about 50 °C or greater, about 100 °C or greater, or even about 150 °C or greater. One way to achieve such a difference is to use silica glass for the capillaries, and a doped silica tube (e.g. germanium doped, fluorine doped, boron doped) as the sleeve tube. In cases where a specially-shaped core structure is used, it may be desirable to form the core structure from a material with an even higher softening point (e.g. tantalum-doped silica). Such a difference in softening point allows the inner portion of the preform to be at a somewhat higher viscosity during the draw, leading to less distortion of the inner portion of the structure.

[0036] In order to reduce the occurrence of breaks during the draw and lower the level of attenuation in the drawn fiber, it may be desirable to provide a preform having reduced levels of contaminants (e.g. particulate contaminants, organic contaminants, inorganic contaminants) as well as reduced levels of OH content (i.e. surface-adsorbed water). As such, it may be desirable to clean the preform at various stages of manufacture with a chlorine-containing gas (e.g. a mixture of chlorine and helium). As the skilled artisan will recognize, chlorine gas is effective at removing many types of contaminants. For example, chlorine gas may react with water (e.g. in the form of surface OH) and many inorganic contaminants to form volatile species that are removed in a subsequent purge cycle. Chlorine may also act to oxidize various organic species. It may also be desirable to include exposure to oxygen in a cleaning regimen in order to more fully remove organic contaminants. Cleaning process are described in detail in

commonly owned ~~U.S. Patent Application Serial Number 10/298,374, filed on November 18, 2002~~ U.S. Patent Number 6917741, issued on July 12, 2005 and entitled “METHODS FOR MANUFACTURING MICROSTRUCTURED OPTICAL FIBERS WITH CONTROLLED CORE SIZE”, the specification of which is hereby incorporated herein by reference in its entirety.

[0038] The preform may be drawn into microstructured optical fiber using methods familiar to the skilled artisan. Additionally, a pressure may be placed on the holes of the preform during the draw in order to keep them from closing due to surface tension. Alternatively, on the end of the preform opposite the drawn end, the holes may be closed in order to maintain a positive pressure inside the holes of the preform, thereby preventing them from closing due to surface tension. It may be desirable to place different pressures on different sets of holes of the preform, as is described in commonly owned ~~U.S. Patent Application Serial Number 10/171,335, filed June 12, 2002~~ U.S. Publication Number 20030230118, published on December 18, 2003 and entitled “METHODS AND PREFORMS FOR DRAWING MICROSTRUCTURED OPTICAL FIBERS”, the specification of which is hereby incorporated herein by reference in its entirety. For example, the large core hole of a photonic band gap fiber may be coupled to a first pressure system, and the holes of the photonic crystal structure may be coupled to a second pressure system. The first pressure system may be set to a lower pressure than the second pressure system so that the inner core hole does not expand relative to the holes of the photonic crystal structure.

Please replace the title of the application with the following amended title:

**LOW LOSS PHOTONIC BAND GAP OPTICAL FIBER**